THE PROFESSIONAL

EDGE

ISSUE 157

JULY/AUGUST 2015

2015 Salary Survey

Seven Engineering and Geoscience Wonders of Saskatchewan

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President's Report

APEGS President
Margaret Anne Hodges, P.Eng., FEC

How do you like your presidential term so far?

I love it! Of course, I'm the one who has always said, "I go to meetings for fun."

Why is that?

I enjoy meeting and talking with people about ideas and understanding our common needs and objectives. In the last couple of months I have attended Engineers Canada and Geoscience Canada's annual general meetings, where we discussed many common themes for our regulatory Constituent Associations (CAs).

In Calgary, Engineers Canada's "Lessons Learned" report on the three national engineering tragedies (Algo Centre Mall collapse, Mount Polley tailings storage breach and the events in Quebec leading to Charbonneau Commission) was a reminder about what our professional duty means. When it is ignored, real people and the environment are harmed. This led to reports on the progress of provincial Continuing Professional Excellence reporting programs. As a self-regulated profession, it is up to us to ensure our professional competency and to communicate to the government and (most importantly) the public that we are acting on the issue of professional

Three of our sister CAs, Alberta, Manitoba and PEI, are working on Act revisions, with open-forum discussions on foreign qualifications recognition, linkages, and synergies with Engineers Canada. We heard reports from all the CA presidents about activities, successes, and challenging issues in their home provinces. I took particular notice of Yukon's Historical Committee, aimed at celebrating the contribution of engineering in the territory.

Delegates at the Geoscience Canada meetings in Saint John expressed the desire to have L'Ordre des Géologues du Québec (OGQ) rejoin Geoscience Canada. Attendees also discussed the need to engage in outreach to recent graduates to promote the value and requirements of professional status. We pondered at what point in the education process should students be introduced to topics of ethics and professionalism. We also discussed the activities each CA engages in to attract K-12 students to the geosciences. I was intrigued to learn about the Earth Ring ceremony, a long-standing tradition in a few provinces.

At both annual meetings, we celebrated the achievements of engineers and geoscientists across the country. Engineers Canada dedicated a luncheon to the recipients of the Canadian Engineering Memorial Foundation scholarships, which recognized 14 amazing young women pursuing their engineering education. I noted that APEGS was not listed as one of the CAs sponsoring this event. I made some inquiries and am glad to report that APEGS will be making a 2015 donation to the scholarship foundation.

At Geoscience Canada, we recognized the contribution of current board member John Pearson, P.Geo., FGC, and of past board member Sandra Foster, P.Geo., FEC (Hon.), FGC. We also thanked past president and APEGS member Greg Vogelsang, P.Eng, P.Geo. At Engineers Canada, we thanked retiring board member and APEGS past president Rick Kullman, P.Eng., FEC, FGC (Hon.) and welcomed Saskatchewan's incoming board member Dwayne Gelowitz, P.Eng, FEC.

All year long, APEGS staff and volunteers keep the national conversations and collaboration going through meetings, committees and boards across the country. My thanks to all of you.

See, I told you: meetings are fun!

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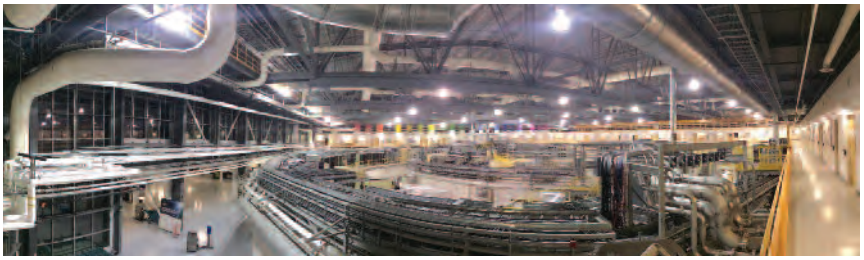


Our goal in this issue is to celebrate some exceptional structures, built through the genius of our professions, that have defined and transformed life in Saskatchewan.

Engineers and geoscientists contribute to people's day-to-day lives in innumerable ways great and small. Some of those ways – like water treatment or cellphone networks – are such commonplace parts of our lives that they are nearly invisible in spite of their vital importance.

Many other accomplishments of the professions are of such gigantic proportions that it is impossible for people not to stand up and take notice.

Like any "Seven Wonders" list, this one is arbitrary and subjective. You cannot measure 'wonder.' Inevitably, you will leave out many that are just as deserving of recognition.

For this reason, the *Professional Edge* committee was careful to name this issue "Seven Engineering and Geoscience Wonders of Saskatchewan", and not "The Seven Wonders."

We do not pretend that this list is complete. We could easily expand it to 20 or 100 wonders. In fact, we would like to. If you have any ideas or suggestions for a future "Wonders of Saskatchewan" issue, please let us know.

SASKPOWER BOUNDARY DAM CARBON CAPTURE AND STORAGE PROJECT

SEVEN ENGINEERING & GEOSCIENCE
WONDERS OF SASKATCHEWAN

APEGS MEMBERS HAVE HEARD A LOT about SaskPower's Boundary Dam Integrated Carbon Capture and Storage Project , for good reason. As one of the first successfully completed carbon capture and storage (CCS) projects in the world, it stands as one of the greatest examples of the innovation and skill of Saskatchewan engineers.

Our province faces hard choices about coal power. On one hand, Saskatchewan and Canada are clamping down on greenhouse gases given off by coal-powered electrical plants. On the other hand, coal is part of SaskPower's generation mix due to its abundance and affordability. Replacing it would be difficult and expensive.

Twenty-one per cent of greenhouse gases in Saskatchewan come from power production. To confront this problem, SaskPower sought to become a leader in CCS so the province could manage emissions while keeping coal as an affordable fuel source.

In October 2014, the Boundary Dam Integrated Carbon Capture and Storage Project began operations. This project is SaskPower's flagship CCS initiative - the first and largest commercial-scale CCS project of its kind in the world.

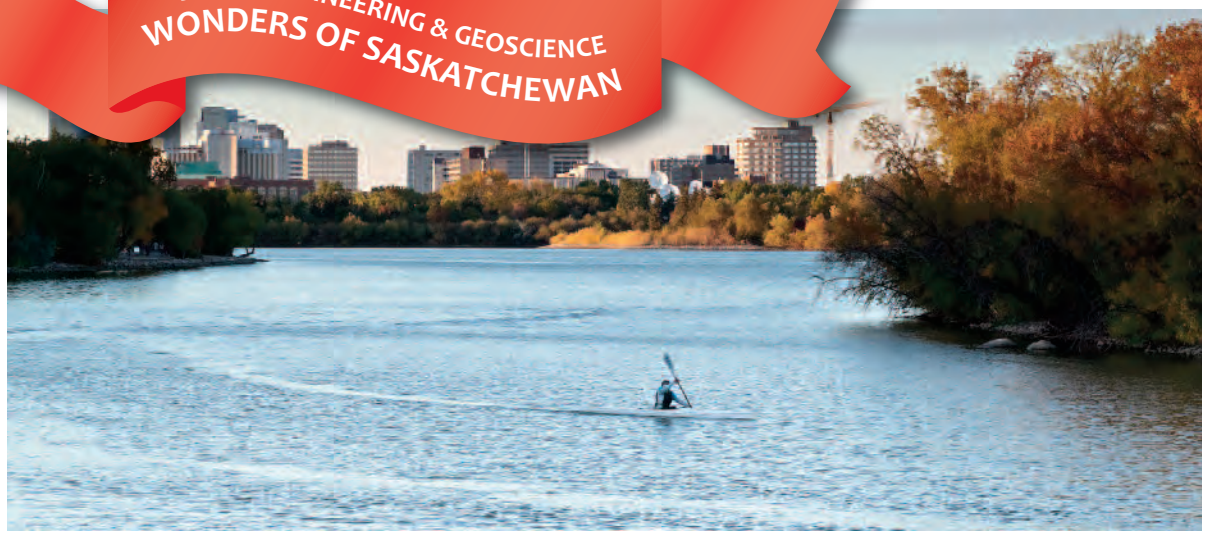
This project transformed the aging Unit #3 at Boundary Dam Power Station near Estevan into a reliable, long-term producer of 120 megawatts of baseload electricity. It is also able to reduce greenhouse gas emissions by 1 million tonnes of carbon dioxide (CO_2) each year. That's equivalent to taking more than 250,000 cars off Saskatchewan roads annually.

The captured CO_2 is transported by pipeline to nearby oil fields in southern Saskatchewan where it will be used for enhanced oil recovery. Any CO_2 not used for enhanced oil recovery will be stored permanently and safely, 3.4 km underground at the injection well commonly known as the Aquistore Project.

In addition to CO_2, there will be opportunities for the sale of other by-products. Sulphur dioxide will be captured, converted to sulphuric acid and sold for industrial use. Fly ash, a by-product of coal combustion, will also be sold for use in ready-mix concrete, pre-cast structures and concrete products.

In addition to generating electricity, the Boundary Dam facility has generated a great deal of interest from countries around the world. There is a significant market for this technology as many countries struggle to solve the environmental challenges of coal power. Coal is used to provide power around the globe — it's a non-renewable energy source that generates approximately 40 per cent of the world's electricity.

SEVEN ENGINEERING & GEOSCIENCE
WONDERS OF SASKATCHEWAN



THE EARLY 2000s WERE NOT GOOD TIMES FOR THE LEGACY OF RENOWNED SEATTLE ARCHITECT MINORU YAMASAKI. One of his famous landmarks, the World Trade Center, was blown up by terrorists. Another, Wascana Centre, was dug up to ensure its longevity.

The federal government's 2005 overhaul of Wascana Centre was simply the latest in a line of engineering and geoscience accomplishments focused on Regina's artificial lake. Practically from the first moment settlers set foot in Wascana Creek's marshy muck, engineers and geoscientists have applied superlative skill to transform the swampy landscape into useful space.

Although Wascana Centre is primarily parkland, its original purpose was commercial. When Regina was founded in the 1880s, it revolved around a single mighty master: the railroad. Wascana Creek was dammed in 1883 to provide water for steam engines and secondarily as a local water supply. Nonetheless, it didn't take Reginans long to start using the lake for recreational purposes.

Later the lake's water became the dedicated coolant for the city's power plant. Heated water was simply dumped back into the lake, which played havoc with the lake's ecology and prevented the lake from freezing in winter.

The commercial and industrial uses of the lake did not last long. By 1920, it had been turned over almost entirely to recreational purposes. As part of a relief project during the Great Depression, the government sought to enhance the lake's recreational appeal by widening and deepening it and adding two artificial islands. The project employed 2,100 men who completed the project using only hand tools and horse-drawn carts.

Yamasaki was commissioned in 1961 to prepare a 100-year master plan for a network of parkland and public spaces surrounding the lake including the new University of Regina. Although Yamasaki's stark modernist vision faced sharp criticism at the time, much of his long-term plan remains in place today.

Over time, sediment reduced the depth of the lake by over 35 per cent. Weeds flourished, water quality plummeted and the lake's smell in summer became infamous. To alleviate these problems and make the lake suitable for competitive boating events, the federal government launched a lake revitalization project – popularly known as the Big Dig – in 2003.

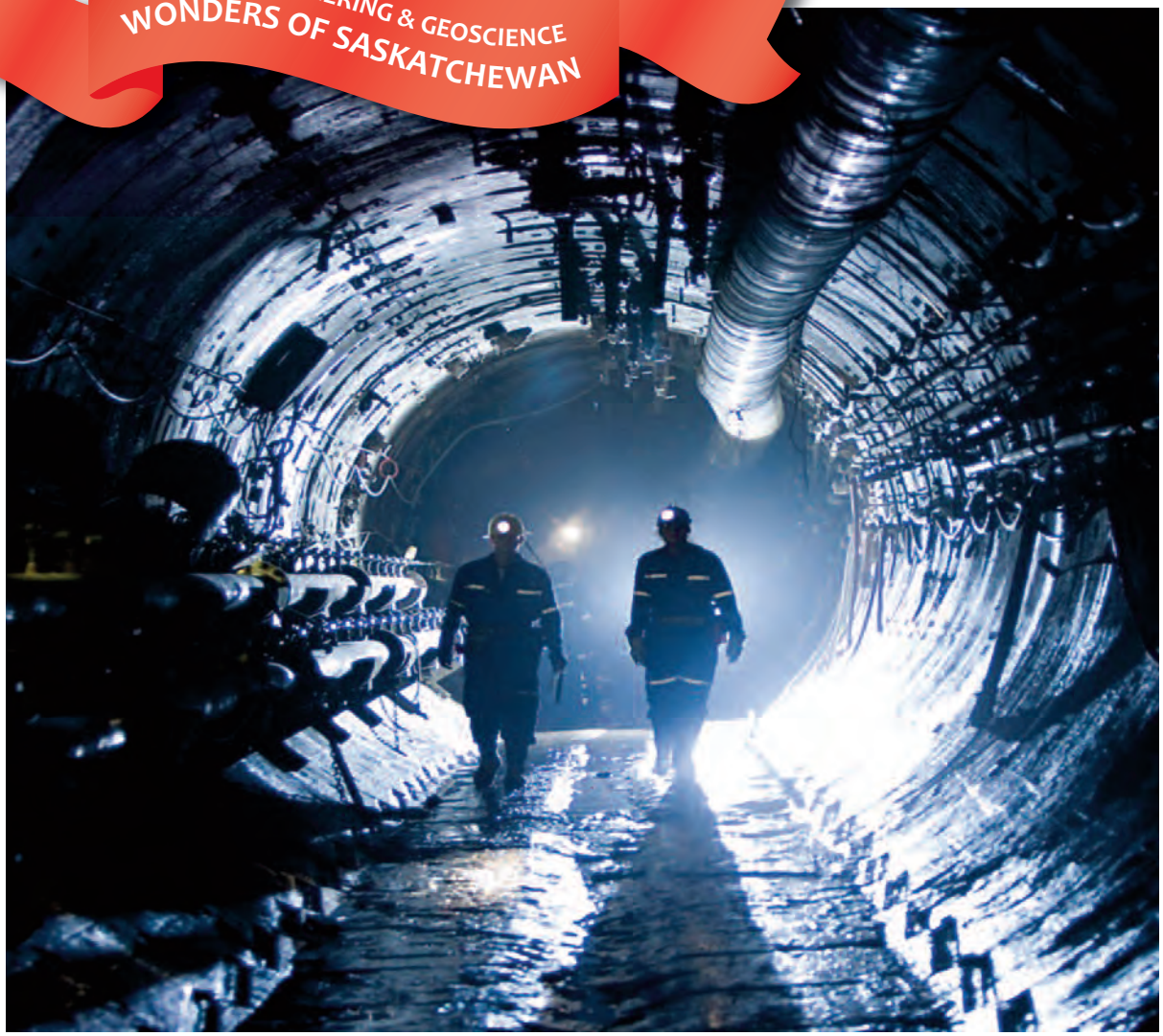
The project started on January 6, 2004. Unlike the 1930s dig, there were few picks and shovels in sight on this project. Workers and equipment worked round the clock for almost a year. Trucks made over 96,000 trips in and out of the work site to haul 1.3 million cubic metres of earth from the lakebed.

When the project was complete, the lake had been deepened to an average 5.5 metres. A range of new facilities were built, including a promenade and pedestrian way at Albert Street, a pedestrian underpass at the Broad Street Bridge, Discovery Island, an island in the east lake federal migratory bird sanctuary, the enlarged Willow Island and Spruce Island, and a floating fountain.

Despite the enormity of the earthworks, the cost was relatively modest. The Big Dig came in at about $18 million, shared by city, provincia and federal governments.

Today Wascana Centre measures 9.3 square kilometres or about 2,300 acres, making it nearly three times the size of New York's Central Park.

CAMECO'S CIGAR LAKE MINE



CAMECO'S CIGAR LAKE MINE ISN'T THE LARGEST URANIUM MINE IN THE WORLD (that distinction is currently held by the neighbouring McArthur River Mine). However, Cigar Lake is certainly the greatest example of sheer determination in the history of uranium mining – and perhaps even in the history of Saskatchewan mining.

Cameco launched construction in 2004 and expected the mine to be completed by 2007 with a construction budget of $450 million. But geology had other plans. In 2006, the mine completely flooded.

"We knew from the beginning that we were dealing with a sandstone formation, located above the unconformity to the basement rock that contained a great deal of water. We had plans to deal with this using technology successfully applied by Cameco elsewhere including ground-freezing techniques and water management systems," says former Cameco vice-president Grant Goddard, P.Eng.

But conventional methods proved inadequate for the sheer amount of water and degree of challenge Cameco was faced with at Cigar Lake. In addition, in the early phases of the mine's development, Cameco did not yet have a full complement of pumps in place. On October 23, 2006, after a small rock slide, water began rushing in faster than crews could pump it out. To avoid damage to other areas of the mine site and to prevent any potential danger to people, the team decided to simply close the bulkhead doors and allow the north end of the mine to flood, as per the company's established contingency plan.

Cameco pushed back the production date to 2010. This began what seemed like a cruel game of fate in which it seemed the mine faced a new catastrophe every time a new production date was announced. While crews were still draining the mine from the first flood, one shaft was flooded again in 2008.

"Needless to say, the event was devastating for our

team's morale. We needed some time after that to regroup but then we kept right on chugging. It was a real testament to the commitment of the people we have working here," says Goddard.

The repair work proved to be one of the most massive engineering and geological feats in the history of Canadian mining. Repairs at this stage cost Cameco more than $100 million (in addition to the original mine development costs) and required the work of roughly 700 people. By applying some of the best minds and most innovative technology available, Cameco succeeded in turning around what appeared to be a nearly insurmountable challenge.

Among the inventive techniques used to solve the problems was a fleet of sensor-packed remote-controlled mini-subs sent down to assess areas where workers could no longer safely go. They also developed inflatable tunnel seals – essentially gigantic bags that could be inflated to seal off and absorb water from partly drained chambers.

"The next time there's a major mine flood anywhere in the world, we'll probably be the first people they call. We've come through a history of research and innovation. I've been here for six years and every day we've had to learn to deal with something new," said project engineer Craig King, P.Eng.

Cameco also developed new techniques for extracting ore from the water-prone site. The solution, ironically, was to fight water with water.

They employed a jet boring technique somewhat similar in concept to potash solution mines. Instead of conventional mining equipment, Cigar Lake uses jets of super-high-pressure water to break down the rock. This water is extracted as a slurry which is then processed to produce ore.

Yet solving the flooding was not the end of Cameco's Cigar Lake headaches. The new production date, 2013, was pushed back once again when it found structural problems with its underground ore storage tanks. Also, Cameco's joint venture partner Areva discovered that it needed to adapt its McClean Lake mill to process Cigar Lake ore.

Finally, seven years over schedule and more than $2 billion over budget, the mine went into full production in March 2014.

That lasted for three months. In July 2014, Cameco identified concerns about weak rock formations that had been heavily saturated from both natural water and jet boring. To resolve the problem, they suspended operations until their ground-freezing efforts became more solid.

The mine went into production again in September 2014 – fingers crossed.

Cameco President and CEO Tim Gitzel dubbed Cigar Lake one of "the most technically challenging mining projects in the world." It also represents one of the greatest technical achievements by Saskatchewan engineers and geoscientists.

SEVEN ENGINEERING & GEOSCIENCE
WONDERS OF SASKATCHEWAN

NEARLY A CENTURY AGO, SASKATCHEWAN WAS DEFINED BY WATER or, more accurately, by the lack of it. The naturally arid prairie climate combined with frequent droughts to hobble Saskatchewan's early development.

In the face of the drought, the federal government launched the Prairie Farm Rehabilitation Administration (PFRA) in 1935 to tackle the disasters of soil erosion and dwindling water supply. The PFRA's engineers, geoscientists and hydrologists succeeded in transforming the province from a dustbowl to an agricultural powerhouse.

The PFRA today operates over 30 dams and has completed a dozen diversion projects responsible for supplying water to many farms and communities in the province's south.

While its small projects were essential for long-term life in Saskatchewan, the PFRA's single most famous project was the creation of Lake Diefenbaker. The project, launched in 1959, required round-the-clock work for eight years to construct a massive reservoir and complete the Gardiner and Qu'Appelle Dams. Today the 227-kilometre lake is not only the largest body of water in southern Saskatchewan but also the source of drinking water for over half the province's population.

The operation of the Lake Diefenbaker dams has since been taken over by the provincial Water Security Agency (WSA) which also operates Saskatchewan's other famous mega-dam, the Rafferty-Alameda Project. Like the Diefenbaker dams, Rafferty-Alameda was built to alleviate cycles of drought and flood that devastated the Souris River Basin region.

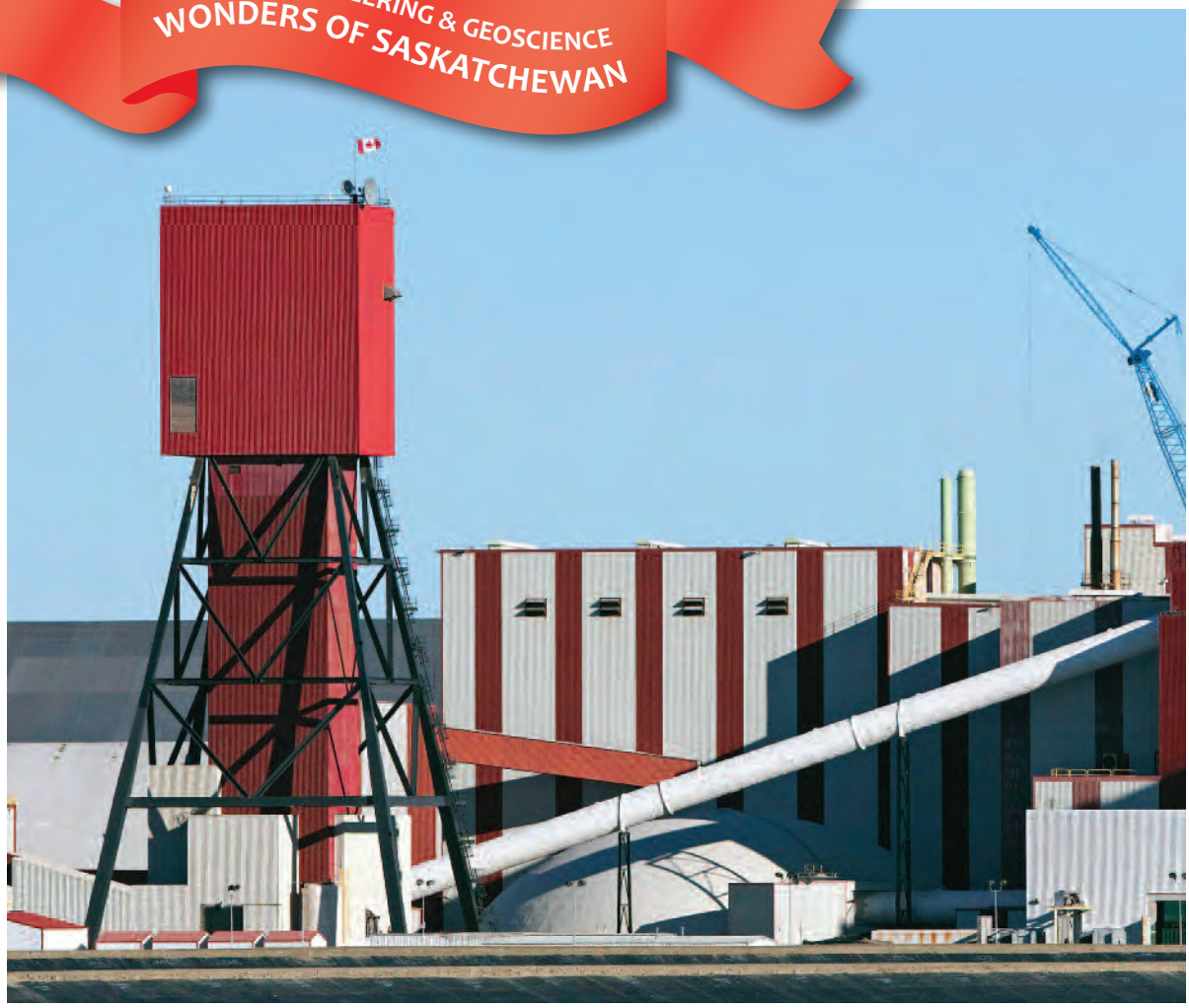
The Rafferty-Alameda Project was developed over the 1988-95 period as a multi-purpose project to provide water for the area, including the Shand Power Station near Estevan, and as flood protection for residents downstream in Saskatchewan and North Dakota, including the city of Minot. The project also ensures a more reliable water source is available for municipal, domestic, irrigation and recreational use in the Saskatchewan portion of the basin.

The project has done its job well. In four years, 1997, 1999, 2001 and 2005, it has been put into service to reduce downstream flooding. Combined, the Rafferty and Alameda reservoirs can hold over 800,000 cubic decametres of water (an Olympic swimming pool holds about one cubic decametre).

On one notable occasion, Mother Nature got the best of the project's engineers. In 2011, spring run-off levels and rains exceeded the 500-year flood estimate. All previous capacity records for the dam were shattered. The dam sat at full capacity for over three months. Finally, on August 1, 2011, WSA officials made the decision to release water out the spillway for the first time in the dam's history.

While this decision caused massive flooding downstream in North Dakota, the dam nonetheless helped mitigate the floods. A Saskatchewan government report produced after the floods estimated that runoff in the Southeast that year could have twice completely filled the Rafferty Reservoir. It is a testament to the dam's engineering excellence that it performed so well even when tested well past its design limits.

SEVEN ENGINEERING & GEOSCIENCE
WONDERS OF SASKATCHEWAN



PCS ROCANVILLE EXPANSION

IN SASKATCHEWAN, EVERYTHING RELATED TO POTASH IS ON A BIG SCALE, but even within this company of giants there is no potash project as big as the PCS Rocanville expansion. Now in the final stages of its ramp-up, the expanded mine will add a further 2.7 million tonnes of annual production. With a total expected annual capacity of 5 million tonnes, the expansion makes Rocanville one of the largest potash mines ever built.

The expansion includes a new personnel and materials shaft approximately 15 kilometres from the existing site, allowing for two production shafts. PCS also built underground and surface development to support this additional capability as well as a new mill to process the additional ore. A 500,000 tonne storage warehouse – one of the largest buildings by square footage in the world – has also been constructed, in addition to improvements to the site's rail loading system.

At a price tag of $2.8 billion, the Rocanville expansions cost nearly as much as the budget for an entirely new mine.

"The scale of these investments in Saskatchewan is pretty amazing to consider. We calculated that, during our expansion program, we will spend about $6,000 for every man, woman and child in the province," said Mike Hogan, P.Eng. PCS's senior vice president, PCS Potash.

The current Rocanville expansion began in 2008. It follows on the heels of other rounds of expansion in 2005.

The Rocanville mine has been in operation since 1970 and is one of PCS's six potash mines in Canada. Many of the mine's roughly 600 employees work almost a kilometre underground. The company also processes the raw potash ore in its adjoining mill.

While potash prices have gone up and down, PCS has taken the long view and stayed focused on seeing the mine through. As the planet faces a future with more and more people and less and less arable land, the potash industry in general will see increased demand as the world strives to grow more food with less land.

SEVEN ENGINEERING & GEOSCIENCE
WONDERS OF SASKATCHEWAN

CANADIAN LIGHT SOURCE SYNCHROTRON

THE CANADIAN LIGHT SOURCE (CLS) is Canada's national centre for synchrotron research and a global centre of excellence in synchrotron science and its applications. Located at the University of Saskatchewan in Saskatoon, the CLS is a world-class, state-of-the-art facility that is advancing Canadian science, enhancing the competitiveness of Canadian industry and contributing to the quality of life of people around the world.

The synchrotron is one of the largest science projects in Canadian history. Since beginning operations in 2005, the CLS has hosted 1,700 researchers from academic institutions, government and industry from 10 provinces and territories; delivered over 26,000 experimental shifts; received over 6,600 user visits; and provided a scientific service critical in over 1,000 scientific publications,

CLS employs more than 200 people including scientists, engineers, technicians and administrative and business personnel.

The facility won the Canadian Council of Professional Engineers' 2002 award for exceptional engineering achievement. The six-storey building required 1,300 tons of steel and enough concrete to build 160 1,200-square-foot homes.

A major challenge was to ensure stability of the light beams that travel along 30m beamlines to the user end stations. There's a risk that vibrations – from traffic, wind, cranes, mechanical pumps, etc. – will affect the beam and invalidate data in scientific experiments. To address this risk, the facility is built on more than 700 piles, each 10-20 metres deep, and the floor is vibrationally isolated from the walls. Temperature must also be controlled. The booster and storage rings can only vary from 23°C by 0.1°C. The beamline hall has the air circulate every seven minutes in order to keep its temperature within a degree of 23°C.

A synchrotron is a source of brilliant light that enables scientists to study the microstructure and chemical properties of materials. Extremely bright synchrotron light is produced by using radio frequency waves and powerful magnets to accelerate electrons close to the speed of light.

The light—spanning the spectrum from infrared light to high-energy X-rays—is shone down beamlines to laboratory end stations where researchers select specific wavelengths of light to observe matter down to the atomic level.

Synchrotrons can be used to analyze a host of physical, chemical, geological and biological processes. Information obtained by researchers can be used to develop ways to help reduce greenhouse gases and clean up mining wastes, examine the structure of surfaces to develop more effective paints and motor oils, design new drugs, develop new materials for products ranging from solar panels to safer medical implants and build more powerful computer chips.

New applications are being thought of all the time - synchrotron experiments are even helping with the search for other life in the universe.

NEW MOSAIC STADIUM

IT'S NOT EVERY DAY THAT A PROVINCE GETS A NEW FOOTBALL STADIUM. In fact, the last time one was built in Saskatchewan was 1910 with the construction of the original Taylor Field. By the end of next summer, the province will welcome the new Mosaic Stadium.

On May 22nd, 2014, the Saskatchewan Roughriders joined the City of Regina and the Province of Saskatchewan in the unveiling of the final design of the new home of the Saskatchewan Roughriders. The new facility will have a standard capacity of 33,000 and will be expandable to 40,000. The stadium will feature wider individual seats, a sunken bowl to ease spectator access, expansive concourses and 38 suites for corporate partners.

The stadium design includes a translucent spectator roof and open south end zone connecting the stadium to the community and creating a feeling of spaciousness, while providing an improved level of comfort for all users.

The stadium is expected to be more or less complete by August 2016, with the first Rider game in the new stadium slated for June 2017. The stadium is being built by PCL Construction Management Inc., which includes HKS Sports & Entertainment, B+H Architects and TD Securities.

All across North America, sports stadiums tend to be some of the biggest and most complex municipal construction projects undertaken, and the new Mosaic Stadium is no exception.

Reminiscent of Regina's Big Dig at Wascana Centre – albeit on a smaller scale – the project began with a massive amount of excavation. Over 250,000 cubic metres of material have been hauled away from the site.

To date, over 25,000 cubic metres of concrete have been poured for the project. When complete, the amount of concrete used on the project could have built six office towers.

At any given time, the project employs around 300 or more construction workers. When the time comes to place the roof on the stadium, four construction cranes will be needed to get the job done.

When it's finished, the new stadium will measure nearly 522,000 square feet, roughly double the size of the previous stadium. From field to roof will be 55 metres, approximately the height of a west coast grain shipping terminal.

But while these big numbers are the ones that will impress engineers, it's some of the small numbers that may mean the most to fans. The seats will be roughly 25 per cent wider. The rows will be over 30 per cent shorter. There will be eight more elevators and (perhaps most significantly of all) 16 new bathrooms.

Member Profile

This month *The Professional Edge* chats with Jolene Devries, P.Eng., assistant mill manager at the Mosaic K2 mine.

Tell us about your personal and professional background.

I was born and raised in Regina and attended Thom Collegiate and then switched over to Winston Knoll when it was built. I was part of the first graduating class from that Winston Knoll.

Why did you choose to go into engineering?

As a child I always wanted to be a veterinarian; due to bad allergies this was not a possibility for me. My dad worked at IPSCO at the time arranged for me to talk to a Vice President from the company who was an engineer. I was strong in math and science and after my conversation with him I decided to pursue an engineering degree.

Did you face any challenges in college as a female engineering student?

Not particularly. I studied environmental engineering, and women were well represented in this discipline.

What was your first job after college?

I started with MR2 McDonald & associates as an Engineer-in-Training and worked on environmental reporting and testing for a variety of clients with them. After MR2 I joined IPSCO and then during my maternity leave with my daughter in 2010 I joined Mosaic.

What do you feel has been your single greatest accomplishment as an engineer so far?

I'm very proud of building the continuous improvement department at the Esterhazy site. We are viewed as a strong Continuous Improvement Team.

What are your interests outside of work?

My husband and I have three children that we stay busy with between soccer, hockey, art and music lessons My husband and I also coach youth soccer and I am the on the board for Esterhazy Youth Soccer and a member of the School Community Council

My personal passion is fitness and nutrition. I workout six days a week on average and I also enjoy helping other people reach their health and fitness goals.

What is your favourite vacation spot?

Last year, we took a trip to Europe that was fantastic. We travelled mainly in Germany and Holland. I enjoyed the history and culture that was around every corner and loved travelling and not having a plan for where we were going next.

Who has had the greatest influence on your life and career?

For both, I would say my parents. They were both hard workers who always pushed me to do well and try to do better. Their philosophy – that there was always a better way to do things and you need to always push yourself – inspired me in the field of continuous improvement.

APEGS View

SES

Update from the Saskatoon Engineering Society (SES).

The SES has completed the first phase of its Strategic Planning Project. Thanks to the 346 members who completed the member survey in April. That information was a key building block as the SES reassessed its vision and goals to develop a strategic plan for the period of 2015-2020.

The strategic plan will be brought to the membership for approval at the AGM to be held in September. All members are welcome to attend. The board of directors will also be elected at that meeting. As a result of recent changes in the job market in the Saskatoon area, there are several vacancies on the board for new volunteers. There will be exciting times ahead as the incoming board will be planning its activities to implement the strategies identified in the plan.

Check out the copy of the strategic plan on our website at the following link: http://saskatoonengineers.com/ses-drupal/content/specialevents and let us know if you are interested in becoming more involved with SES activities.

A Thank You from UNICEF

At the Past President's Dinner at the 2015 APEGS Annual Meeting, the past president challenged guests to donate money to UNICEF's relief effort for earthquake victims in Nepal. The challenge succeeded in raising $3,480 that evening.

UNICEF provided us with an update on how our donations have been put to work:

Dear APEGS,

As one of our valued supporters we wanted to thank the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) and your community for your generous support. Your donation of $3,480 towards the Nepal relief fund allows UNICEF to reach more children and families with life-saving interventions. We could not do any of the work we do without the generous support of donors like you.

One month after the two major earthquakes devastated Nepal, one in six children in the country are still in urgent need of humanitarian assistance. UNICEF staff were on the ground in Nepal when the earthquake struck, pre-positioned with supplies for 5,000 families, and today UNICEF continues to provide humanitarian assistance, working with partners to build back better in Nepal.

The Impact of Your Support

Over the past month UNICEF has worked with partners to distribute life-saving supplies and services to children and their families, including tents, tarpaulins, hygiene kits, therapeutic foods, medical kits, communication materials, plastic buckets, school-in-a-box and early childhood development kits.

Key achievements for children include:

- Reaching approximately 305,100 people with clean water interventions.
- Providing approximately 45,200 people with access to adequate sanitation and hand-washing facilities.
- Distributing 512 metric tonnes of supplies to partners, including providing medical supplies, tents, blankets and hygiene kits to district hospitals and health centres.

On behalf of the children and their families in Nepal, thank you.

UNICEF Canada staff would also like to show their gratitude by sending you a big #highfiveit and thank you to our donors for all their support in emergency times.

Best regards,
Richard DeLisle, Development Coordinator
UNICEF Canada

Council Notes

June 19, 2015, Temple Gardens, Moose Jaw, SK

15 of 19 Councillors present

- Council appointed Kevin Traves, P.Eng. as Chair of the Experience Review Committee for a two-year term.
- The Governance Board reported that Tonia Batten, P.Eng., Tim Ledding, P.Eng., Lisa Nehring, P.Eng. and Kimberley Tang, P.Eng. were appointed to the Experience Review Committee for a three-year term.
- The Governance Board reported that Colin Abernethy, P.Eng., Georges Belcourt, P.Geo., Rajeev Chadha, P.Eng., Horea Chifa, P.Eng., Jeremy Gabel, P.Eng., Xiao Wei (Annie) Meng, P.Eng., Matthew Naylor, P.Eng., Kevin Ness, P.Eng., Damodar Pokhrel, P.Eng., Behrooz Razban, P.Eng., Amritpaul Romana, P.Eng., Raymond Sthamann, P.Geo., Devendra Trivedi, P.Eng., and Mark VanVliet, P.Eng., were appointed to a second three-year term on the Experience Review Committee.
- Changes to the Experience Review Manual, as recommended by the Governance Board, were approved by Council.
- The Governance Board reported that Brian Palm, P.Eng., Ashok Thakkar, P.Eng. and Shib Podder, P.Eng. were appointed for a three-year term and that Fran Rieder, P.Eng., Doug Soveran, P.Eng., Dr. Satya Panigrahi, P.Eng. and Dr. Lal Kushwaha, P.Eng. were reappointed to a second three-year term on the Academic Review Committee. The Academic Review Committee has appointed Glenn Hussey, P.Eng., Andrea Tresek, P.Eng., Adeneki Adeoti, P.Eng., Moussa Fadlelmawla, P.Eng. Yimin Song, P.Eng., Jamal Oumha, P.Eng. and Peter MacLachlan, P.Eng. as reviewers.
- The Terms of Reference of the Registrar's Advisory Committee, as amended by the Governance Board, were approved by Council.
- Ronald J. Bolton, P.Eng., Robert J. Dunlop, P.Eng., Dennis J. Rutten, P.Eng., R. Edward Scoular, P.Eng., Judith A. Stoeterau, P.Geo., George T. Williams, P.Eng., Brian R. Wood, P.Eng., and David A. Wolfrom, P.Eng. were approved by Council as Life Members.
- Council endorsed the goal of having 30 per cent of new members of the Association as women by the year 2030, and passed a motion in support of activities and initiatives that will facilitate achieving this goal.
- Council approved a donation in the amount of $2,500 to the Canadian Engineering Memorial Foundation for the Marie Carter Scholarship.
- The Image and Identity Board reported the following appointments: Ian Farthing, Member-in-Training and Philip Winter, P.Eng. to the Awards Committee for a three-year term; Catherine Griffith, P.Eng. to the Connection and Involvement Committee for a three-year term; Jeanette Gelleta, P.Eng. and Brent Marjerison, P.Eng., FEC to the Professional Edge Committee for a second three year term.
- Council appointed Sandra Foster, P.Geo., FEC(Hon.), FGC as Chair of the Awards Committee for a two-year term and Robert Berry, P.Eng., FEC as Chair of the Communications and Public Relations Committee for a two-year term.
- Council appointed Don George, P.Eng., Satyanarayan Panigrahi, P.Eng., Connor Wright, P.Eng. and Jamie Tratch, P.Eng. to the Discipline Committee for a three-year term.
- The next Council meeting is scheduled for October 8 and 9, 2015 in Saskatoon. Council will meet with the APEGS past presidents on Thursday, October 8, 2015.

Celebrating Our Own

Shahrooz Nafisi, Ph.D., P.Eng., senior research engineer at Evraz, received the Vanadium Award from the Council of the Institute of Materials, Minerals and Mining for his contribution to the most outstanding paper of 2014 in the metallurgy and technology of vanadium and its alloys.

2015 APEGS Salary Survey Summary Results

The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) contacted 5,148 Professional Engineers, Professional Geoscientists, Engineers-in-Training, Geoscientists-in-Training and Licensees living in Saskatchewan.

A total of 2,002 members completed the survey, representing a 38.9 per cent response rate. Of those, 1,929 were employed full-time and used in the analysis. Surveys were completed from mid February to late March 2015 and salaries reported were as at December 31, 2014. Insightrix Research Inc. compiled and tabulated all results.

The detailed report from Insightrix can be found on the APEGS website at **www.apegs.ca.**

The main goals of the survey are:

to provide information to all members regarding monetary compensation for different levels of responsibility and advanced degrees;

to provide information to employers to assist them in establishing appropriate pay levels for recent graduates and ensuring competitive compensation packages for experienced professionals; and

to give students, career counsellors and other interested persons information on employment, including salaries, in the engineering and geoscience professions in Saskatchewan.

Annual Salary by Final Year of Graduation (B.Sc.)

	COUNT	MEAN	5	25	MEDIAN	75	95	%
< 1976	67	$127,128	$10,000	$97,092	$121,200	$164,153	$225,000	3.5%
1977	7	$170,024	$104,000	$132,000	$160,000	$195,000	$265,000	0.4%
1978	11	$142,636	$70,000	$75,000	$140,000	$169,000	$260,000	0.6%
1979	18	$153,039	$90,000	$130,000	$152,000	$166,000	$275,000	0.9%
1980	13	$125,946	$0	$128,000	$135,000	$150,000	$169,000	0.7%
1981	7	$159,429	$125,000	$147,000	$155,000	$175,000	$191,000	0.4%
1982	27	$136,138	$65,000	$106,300	$134,000	$162,000	$220,000	1.4%
1983	18	$148,360	$66,000	$120,000	$149,408	$165,500	$225,000	0.9%
1984	25	$129,312	$82,000	$105,000	$120,000	$133,000	$215,000	1.3%
1985	23	$142,940	$82,500	$115,000	$128,710	$164,000	$252,000	1.2%
1986	34	$135,059	$72,000	$105,000	$127,500	$162,000	$220,000	1.8%
1987	32	$133,073	$70,000	$99,300	$132,600	$160,500	$200,000	1.6%
1988	22	$130,521	$105,000	$115,000	$126,800	$145,000	$176,000	1.1%
1989	26	$132,867	$75,000	$100,000	$130,000	$144,000	$230,000	1.3%
1990	22	$142,519	$81,660	$104,040	$140,750	$180,000	$215,000	1.1%
1991	22	$136,378	$90,000	$108,000	$142,349	$165,000	$182,000	1.1%
1992	20	$127,199	$45,000	$106,500	$132,500	$145,250	$200,000	1.0%
1993	25	$128,072	$64,000	$105,000	$130,000	$150,000	$200,000	1.3%
1994	31	$131,911	$60,000	$110,000	$137,100	$163,162	$178,000	1.6%
1995	38	$129,183	$85,000	$98,000	$124,422	$150,000	$199,000	2.0%
1996	39	$122,137	$70,000	$95,000	$120,000	$149,856	$175,000	2.0%
1997	41	$121,426	$75,000	$96,000	$119,235	$138,197	$167,500	2.1%
1998	30	$112,695	$45,000	$83,000	$113,500	$130,000	$185,000	1.5%
1999	48	$118,341	$61,734	$94,840	$107,500	$141,500	$180,000	2.5%
2000	52	$109,142	$64,000	$92,737	$105,000	$121,590	$165,000	2.7%
2001	62	$111,248	$67,000	$95,000	$106,750	$125,000	$155,000	3.2%
2002	64	$110,009	$55,000	$91,500	$108,750	$128,000	$152,600	3.3%
2003	73	$108,497	$61,800	$92,760	$108,500	$124,000	$165,000	3.8%
2004	77	$110,343	$68,000	$86,053	$100,000	$114,000	$155,000	4.0%

Annual Salary by Final Year of Graduation (B.Sc.) continued

	COUNT	MEAN	5	25	MEDIAN	75	95	%
2005	77	$105,237	$71,250	$90,000	$104,000	$119,225	$140,000	4.0%
2006	73	$103,595	$65,000	$87,470	$103,200	$116,000	$145,000	3.8%
2007	101	$97,629	$60,000	$84,000	$98,500	$110,000	$125,000	5.2%
2008	95	$88,324	$60,000	$80,000	$88,000	$98,600	$121,000	4.9%
2009	100	$85,456	$64,000	$74,150	$86,000	$94,140	$108,125	5.1%
2010	113	$81,317	$61,200	$73,100	$82,000	$88,000	$104,625	5.8%
2011	106	$75,637	$60,000	$68,000	$72,800	$81,000	$98,000	5.5%
2012	133	$76,838	$54,516	$64,000	$68,500	$78,000	$95,284	6.8%
2013	111	$70,160	$56,000	$62,500	$67,500	$77,000	$90,000	5.7%
2014	58	$64,008	$42,000	$58,000	$62,750	$72,000	$80,000	3.0%

Annual Salary by Designation

	COUNT	MEAN	5	25	MEDIAN	75	95	%
P.Eng.	1242	$116,972	$70,000	$91,000	$110,000	$135,000	$188,625	62.0%
P.Geo.	87	$121,054	$70,000	$100,000	$117,000	$145,000	$176,000	4.3%
P.Eng. & P.Geo	18	$120,799	$66,000	$93,000	$110,000	$150,000	$185,000	0.9%
Engineering License		NA	NA	NA	NA	NA	NA	
Engineer-in-Training	602	$75,507	$52,000	$64,000	$71,312	$82,400	$105,000	30.1%
Geoscience License		NA	NA	NA	NA	NA	NA	
Geoscientist-in-Training	42	$90,913	$60,000	$73,000	$84,000	$99,000	$160,000	2.1%

*NA=Not available due to reporting rules.

Annual Salary by Discipline

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Civil	391	$97,500	$58,000	$70,000	$88,500	$110,000	$171,000	19.5%
Mech/Ind	397	$102,690	$59,800	$73,757	$96,000	$123,600	$167,000	19.8%
Elec/Physics	277	$104,533	$60,000	$77,281	$96,000	$124,000	$170,000	13.8%
Chem/Ceramic/Metal	90	$110,898	$65,004	$81,675	$97,950	$134,000	$180,000	4.5%
Geo/Mining/Petro Eng	261	$119,219	$71,000	$87,600	$109,000	$140,000	$192,000	13.0%
Agriculture/Forestry	40	$80,233	$35,000	$62,250	$78,250	$99,000	$121,000	2.0%
Environmental	124	$90,009	$48,750	$67,076	$90,000	$106,500	$141,072	6.2%
Geoscience	123	$107,087	$64,800	$81,000	$99,000	$130,000	$175,000	6.1%
Software Eng	55	$105,319	$61,872	$80,080	$104,256	$120,000	$185,000	2.7%
Industrial	64	$102,752	$102,752	$64,500	$74,415	$95,500	$117,500	3.2%
Other	175	$108,271	$108,271	$57,500	$75,000	$100,000	$130,000	8.7%

Annual Salary by Function

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Project/Op Mgmt	788	$109,545	$62,000	$82,000	$100,000	$128,000	$178,000	39.4%
Project Admin	67	$86,739	$55,967	$70,000	$89,000	$100,000	$125,000	3.3%
Design	430	$90,639	$58,000	$68,500	$82,900	$104,000	$153,000	21.5%
Research/Planning	105	$96,118	$54,000	$71,000	$90,000	$115,000	$162,000	5.2%
Inspection/Quality/Residential	52	$79,277	$22,344	$63,750	$74,940	$94,125	$135,000	2.6%
Operating/Maintenance	145	$101,407	$64,000	$82,000	$98,600	$119,000	$150,300	7.2%
Teaching	45	$121,363	$75,000	$92,000	$120,200	$149,966	$169,000	2.2%
Marketing/Sales	18	$99,089	$50,000	$67,500	$77,325	$115,000	$220,000	0.9%
Reg Approvals/Enforcement	60	$98,495	$62,750	$78,000	$95,000	$110,850	$143,000	3.0%
Exploration	71	$102,730	$61,293	$81,000	$95,088	$115,000	$175,000	3.5%
Other	80	$94,120	$17,400	$65,400	$94,680	$116,000	$163,162	4.0%

Annual Salary by Industry

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Consulting Service	588	$98,145	$56,000	$68,016	$88,100	$120,000	$175,000	29.4%
Oil & Gas	93	$111,832	$70,000	$83,000	$100,000	$127,561	$200,000	4.6%
Resource Except Oil & Gas	367	$118,001	$73,000	$90,900	$108,250	$140,000	$175,000	18.3%
Procurement/Construction	167	$102,598	$60,000	$70,200	$90,000	$110,000	$210,000	8.3%
Manufacturing Durables	152	$90,144	$56,129	$65,700	$83,000	$106,400	$150,000	7.6%
Manufacturing Non-Durables	53	$113,845	$55,000	$79,000	$104,000	$137,000	$204,000	2.6%
Service For Profit	26	$100,604	$48,000	$72,000	$95,000	$121,000	$175,000	1.3%
Service Not For Profit	143	$98,979	$63,000	$77,000	$94,800	$111,700	$150,000	7.1%
Utilities	265	$107,754	$64,572	$83,000	$105,000	$126,000	$167,500	13.2%
Educational Services	69	$115,816	$20,000	$83,985	$116,928	$149,966	$195,000	3.4%
Agriculture/Forestry	12	$92,035	$71,582	$78,040	$89,000	$102,250	$125,000	0.6%
Other	67	$93,242	$50,000	$69,000	$91,250	$105,427	$149,000	3.3%

Annual Salary by Degrees

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Bachelor's/qualified registration	1347	$100,912	$60,000	$73,000	$91,700	$119,000	$169,000	67.3%
Between Bachelor & Master's	217	$106,659	$58,834	$82,000	$101,200	$125,000	$167,000	10.8%
Master's Degree	312	$110,185	$56,000	$83,851	$105,000	$132,000	$185,000	15.6%
Between Master's & Doctorate	35	$123,420	$44,000	$83,044	$105,000	$165,000	$260,000	1.7%
Doctorate Degree	91	$122,924	$55,000	$97,000	$120,000	$150,000	$195,000	4.5%

Annual Salary by Experience

	COUNT	MEAN	5	25	MEDIAN	75	95	%
<1 year	64	$63,926	$39,500	$57,000	$64,000	$72,000	$83,600	3.2%
1 year	35	$72,144	$55,000	$61,872	$66,866	$79,290	$100,000	1.7%
1.5 years	77	$70,183	$53,000	$63,000	$67,000	$75,000	$95,687	3.8%
2 years	120	$72,367	$53,258	$63,750	$68,750	$78,896	$96,650	6.0%
3 years	165	$73,331	$55,000	$65,000	$72,000	$82,400	$96,000	8.2%
4 years	130	$80,692	$54,000	$71,000	$79,000	$89,902	$107,474	6.5%
5 years	125	$94,825	$64,000	$75,000	$86,000	$95,000	$145,000	6.2%
6 years	114	$91,848	$62,000	$82,500	$90,000	$102,600	$120,000	5.7%
7-8 years	196	$100,467	$67,503	$87,500	$99,000	$111,892	$134,000	9.8%
9-10 years	174	$107,461	$69,000	$92,000	$104,000	$122,400	$154,150	8.7%
11-12 years	113	$116,931	$65,000	$94,160	$110,000	$126,000	$165,000	5.6%
13-14 years	111	$120,120	$75,000	$100,812	$116,000	$131,280	$180,000	5.5%
15-17 years	111	$120,565	$73,770	$98,000	$120,000	$144,380	$167,000	5.5%
18-20 years	97	$137,401	$88,200	$116,525	$138,000	$159,000	$192,000	4.8%
21-24 years	84	$132,815	$76,000	$105,000	$131,000	$155,000	$200,000	4.2%
25+ years	286	$141,953	$70,000	$113,000	$136,750	$165,000	$220,500	14.3%

Annual Salary by Sector

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Public Sector	612	$104,364	$60,036	$80,000	$100,000	$122,630	$166,000	30.9%
Private Sector	1366	$104,199	$58,500	$75,000	$95,000	$124,000	$180,000	69.1%

Total Salary

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Base Salary	1929	$105,111	$60,000	$76,500	$97,000	$124,000	$175,000	100%
Salary including bonus	1929	$121,447	$63,500	$82,500	$106,000	$142,124	$220,000	100%

Salary Changes - Full-Time Positions

	MEDIAN SALARY	INCREASE	AVERAGE SALARY	% INCREASE
1987	$48,000	$49,269		
1989	$50,928	6.10%	$62,887	27.60%
1991	$54,110	6.20%	$57,578	-8.40%
1993	$54,480	0.70%	$56,703	-1.50%
1995	$56,400	3.50%	$59,142	4.30%
1997	$60,000	6.40%	$62,266	5.30%
1999	$62,500	4.20%	$65,401	5.00%
2001	$66,000	5.60%	$68,877	5.30%
2003	$68,800	4.20%	$71,210	3.40%
2005	$71,008	3.20%	$73,607	3.40%
2007	$74,000	4.20%	$77,374	5.10%
2008	$76,352	3.20%	$83,025	7.30%
2009	$80,000	4.80%	$86,908	4.70%
2010	$82,950	3.70%	$91,548	5.30%
2011	$84,224	1.54%	$91,154	-0.40%
2012	$89,472	6.23%	$96,219	5.56%
2013	$90,000	0.59%	$98,030	1.88%
2014	$94,500	5.00%	$102,475	4.53%
2015	$97,000	2.65%	$105,111	2.57%

Regression Analysis

Stepwise linear regression was used to find the best model for estimating salaries. The formula produced explains over 50 per cent of the variance in salary (51.1%). Any model explaining at least 50 per cent of the variance in the dependent variable can be considered an effective model. Refer to the "Classification Rating Guide," which can be found on **www.apegs.ca**, to determine the values for each factor.

Factor	B (Coefficient)	Beta (Relative importance)
Duties (A)	151	0.211
Experience (C)	309	0.272
Supervision Scope (G)	958	0.221
Professional designation	8,012	0.084
(Constant)	56,265	

Formula for expected salary (SE) without bonus:

SE = 56265 + (151 x A) + (309 x C) + (958 x G)

Add 8,012 if you have acquired professional status within your field (P.Eng or P.Geo)

2015

WOMEN'S HISTORY MONTH

'Pink Tea' Celebration of Women's Contributions & Achievements

Tues., Oct. 20
6:30 p.m. Doors Open
7:00 p.m. Program Begins
Conexus Art Centre
Theatre Lobby

Everyone is Welcome!
FREE ADMISSION!

Keynote Speaker:
Sheila Fahlman
Founding member of
Grandmothers 4 Grandmothers Regina

* Displays from local organizations
* Children's Activities by by Educating Youth in Engineering & Science (EYES)
* Sales by local charities
* *Silent Auction*
* Light Refreshments
* Door Prizes

* RSVP by October 10
to reginawhm@gmail.com
visit www.reginawhm.ca

October 18, 2015 marks the 86th anniversary of the 1929 Person's Case, in which women were legally declared persons in Canada, a significant historical event that changed the lives of many people. 'Pink Tea' is a term used by the suffragettes as code for a meeting. The use of this code enabled the women to organize without the disturbance of those who opposed their agenda. This event is made possible each year through sponsorship. If you or your organization would like the opportunity to be recognized at this year's event, please contact Angela Foster for sponsorship opportunities at afoster@apegs.ca or 306-525-9547.

University of Saskatchewan Space Design Team Update

SUBMITTED BY THOMAS JOHNSON, USST PRESIDENT

After another year of hard work, the University of Saskatchewan Space Design Team (USST) designed and built the #1 Canadian Mars rover. With 287.3 points, we came third out of the North American teams in the University Rover Challenge (URC) in Idaho Falls. Out of the 23 international teams competing, we placed seventh in the world.

The team that took first this year, the Legendary Rover Team from Poland, had an amazing score of 459.8. They were followed by Brigham Young University from Utah in second with 370.8 and Project Scorpio from Poland in third with 363.8 points.

We increased our score by 67.3 points over last year. However, there is still room for improvement and next year's rover will be even better.

Our team has only a few months until the European Rover Challenge (ERC) 2015 starts on September 5. Over this time, the team is going to be doing major work getting electrical systems ready.

The ERC judging places more emphasis on autonomy. The rover is going to have to navigate and drive on its own, using only the GPS coordinates. To tackle this challenge, the team plans on implementing a variety of hardware and software. At the same time, the team will be looking into what design changes and improvements can be made for URC 2016.

For URC 2016, we will be looking to recruit a dedicated team of geologists and biologists to better research and prepare for what a sample retrieval mission would require if it were actually based on Mars. The judges this year asked many questions about past research on signs of life and geology on Mars, and we did not feel we were adequately prepared for those questions.

A big thank you to APEGS and all our sponsors and donors for making this possible and allowing a few students to follow their dreams and create something amazing.

College Corner

UNIVERSITY OF REGINA

David deMontigny, Ph.D., P.Eng.
Associate Dean, Faculty of Engineering
University of Regina

Faculty News

On March 28 the faculty hosted Engineering Project Day, our annual event that highlights the hard work and achievements of our graduating students. This year we had over 167 students from across our five disciplines participate, resulting in 70 completed capstone projects (electronics, environmental, industrial, petroleum and software systems engineering). Thank you to all of our industry sponsors and volunteer judges for their tremendous support.

This spring the faculty established an Engineering Advisory Board that is made up of senior engineers from private industry, public utilities and government departments. This board provides the faculty with linkages to the local engineering community. It also provides advice to the faculty on how we can best serve the needs of industry and the profession within Saskatchewan.

Dr. Gordon Huang, Tier 1 Canada Research Chair in Energy and Environment, has been inducted as a new Fellow in the Canadian Academy of Engineering. This honour recognizes Dr. Huang's work in environmental systems engineering. Join us in congratulating him on this significant recognition.

EYES

The Faculty of Engineering and Applied Science has been operating the EYES Program (Educating Youth in Engineering and Science) since 1995. Over the past two decades, the program has grown considerably. Today EYES provides a variety of programming including in-school workshops, day camps and all-girls day camps. EYES also offers satellite camps in numerous communities across southern Saskatchewan as well as a winter club program in Regina.

As part of its mandate, EYES provides programs for underserved populations in Regina. Last year we ran free summer camp programming for seven community schools and provided over $13,000 in bursaries to low-income families. Additionally, the EYES program was proud to partner with the Open Door Society to run a camp for newcomers to Canada.

In May and June of this year, EYES ran their in-school workshop program in 112 schools across 57 communities in southern Saskatchewan. This provided 16,000 elementary schoolchildren exposure to hands-on science-and engineering-related activities. During the summer camps in July and August, over 1,300 children participated in week-long EYES Summer camps at the University of Regina campus.

The success the EYES program has enjoyed would not be possible without the tremendous support it receives from Actua, local and national funders, as well as numerous individual supporters. The program not only provides Saskatchewan youth with an excellent science and engineering camp, it also provides full-time employment to 22 university students from a wide variety of disciplines.

EYES is committed to sparking curiosity and developing a lasting interest in science, engineering and technology for youth in southern Saskatchewan. To learn more, visit us at **http://eyes.uregina.ca**.

Call for Award Nominations

The Awards Committee is seeking nominations for the APEGS Awards as well as other provincial and national awards such as the Saskatchewan Order of Merit, the Order of Canada, the Canadian Engineers' Awards (Engineers Canada) and the Canadian Professional Geoscientist Award (Geoscientists Canada).

If you know of a Professional Engineer or Professional Geoscientist who should be considered for an award, or an exceptional engineering or geoscience project that should receive an award, the committee would like you to nominate that member or project. There are seven APEGS awards: the **Exceptional Engineering/Geoscience Project Award**, the **Environmental Excellence Award,** the **Friend of the Professions Service Award**, the **Promising Member Award**, the **McCannel Award**, the **Brian Eckel Distinguished Service Award**, and the **Outstanding Achievement Award**. Criteria for each of the awards are contained in the nomination form that appears on the next page.

In addition to the APEGS Awards, the Awards Committee nominates APEGS members for awards presented by both Engineers Canada and Geoscientists Canada. Nominations for awards must be received by November 30 to provide time for the Awards Committee to review and consider the nominations for the annual APEGS Awards and to prepare nomination packages for provincial and national awards. The Awards Committee will develop and maintain a list of nominees for consideration for the various awards.

Nomination form on following page.

Please send nominations to:

APEGS Awards Committee
300 - 4581 Parliament Avenue, Regina SK S4W 0G3
Fax: (306) 525-0851 or Email: apegs@apegs.ca

Nominations for APEGS Awards

Do you know an individual or a group who should be considered for an award?

I would like to nominate: .....

In the following category: .....

Exceptional Engineering/Geoscience Project Award
Accomplishments in Engineering/Geoscience (100%). The project team must be made up predominantly of Saskatchewan engineers and/or geoscientists. The project may be located inside or outside of Saskatchewan. The award will be granted when the efforts of an individual or team of engineers/ geoscientists is deemed to be of great significance.

Environmental Excellence Award *(all professional members of APEGS are eligible)*
Environmental awareness, preservation, protection and reclamation through education, leadership and/or involvement (25%). Enhancement of quality of life by improvement of the physical or social environment through engineering, geoscience or other works (10%). A real extent of environmental protection or preservation as a result of the efforts (50%). Prevention of potential environmental impacts vs. correction/remediation of existing impacts (15%). This award is intended to have broad scope and be open to a wide range of projects, achievements, initiatives and activities contributing to the protection and preservation of the environment.

Friend of the Professions Service Award *(available to anyone who is not a member of APEGS)*
Recognizes contributions by an individual or a group in the support and promotion of the professions (100%). Examples of activities include: documentation of the history of the professions; comprehensive media coverage of an outstanding engineering or geoscience achievement; long-time service on an APEGS committee or other form of contribution to the success of activities promoting the professions to the public.

Promising Member Award *(available to any member who has held P.Eng./P.Geo. for less than 5 years)*
Accomplishments in Engineering/Geoscience (50%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (25%). Service to community (25%).

McCannel Award
Accomplishments in Engineering/Geoscience (20%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (70%). Service to community (10%).

Brian Eckel Distinguished Service Award
Accomplishments in Engineering/Geoscience (35%). Service to the professions in public education and/or active participation in engineering/ geoscience associations, societies, institutes (35%). Service to community (30%).

Outstanding Achievement Award
Accomplishments in Engineering/Geoscience (70%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (20%). Service to community (10%).

I am nominating this person / project because (25 words or less):

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Other references (professional and community service related) to contact include:

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Submitted by:

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APEGS Recognizes the

Top Engineering and Geoscience Graduates

Every year, the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) recognizes engineering and geoscience graduates at the University of Regina and University of Saskatchewan for outstanding academic achievements and leadership. Meet the next generation of innovation.

Congratulations, 2015 Gold Medal Recipients!

Joel Guenter

Joel Guenter grew up on a farm near Hague, SK, where he attended school. After high school, he attended Millar College of the Bible for one year. Joel's farm background gave him a strong interest in mechanics and design which, combined with his interest in math and science, led him to study mechanical engineering at the University of Saskatchewan. Joel worked as an intern for PotashCorp where he learned a lot of the practical aspects of engineering under the guidance of some exceptional supervisors. He was a member of the team that won the mechanical engineering Student Paper Presentation Competition at the 2015 Saskatoon Engineering Society Student Competition. Upon the completion of his degree, Joel will be working as an Engineer-in-Training in the oil industry for Devon Canada.

Sean Hillacre

Sean Hillacre, from Kindersley, SK, earned his B.Sc. Honours in Geological and Earth Sciences from the University of Saskatchewan in 2015. Over the past year, he has worked as a teaching assistant in structural geology. Last summer, he worked as a student geologist with NexGen Energy, assisting with exploration work for uranium in the Athabasca Basin. He has earned a number of awards including the 2014 Saskatchewan Geological Society President's Award, the 2014 Best Undergraduate Student Poster award from the Saskatchewan Geological Open House, the Walter Kupsch Award for most outstanding fourth-year student from the Saskatchewan Geological Society, the Michael Welch Memorial Prize from the U of S Ore Gangue Students' Society and the Ore Gangue Memorial Award in Geological Sciences. Sean is active with a range of charitable causes such as Grilledcheesapolooza, a music festival dedicated to supporting arts and culture in his home town of Kindersley.

Ericka Bourlon

Ericka Bourlon has shown remarkable academic achievement and leadership qualities. She has made significant contributions to student activities at the Department of Geology, at the University of Regina. Ericka graduates with the highest grade point average in the discipline this year.

She has received several scholarships and awards such as the Centennial Merit Scholarship, Donald M. Kent Geology Travel Award and Saskatchewan Innovation Undergraduate Scholarship. Ericka has been involved in numerous activities organized by the D.M. Kent Club. In 2014 she was one of four senior organizers for an educational trip to Iceland. In addition to her busy academic life, Ericka spent her spare time volunteering at Camp Kindle and the Nature Conservancy of Canada. Ericka has held summer student positions with the Saskatchewan Geological Survey, Cameco and Nexen. She plans to work in the mining industry and eventually pursue a Master's degree.

Brayden Willenborg

Brayden Willenborg graduated from the Faculty of Engineering at the University of Regina in 2015 with a major in software systems engineering. Software systems engineering at the U of R has the lowest enrolment of all the disciplines. Brayden helped change this by being an advocate for the program. In 2013, Brayden was elected Vice-President of Professional Affairs for the Regina Engineering Students' Society. While in that position, Brayden acted as an advocate for the faculty with numerous senior engineering organizations. He helped plan and organize events for engineering students. He also organized and volunteered for events to encourage high school students interested in math and science to consider engineering. He has now begun his career at SED Systems in Saskatoon and plans to stay involved in the engineering community through groups such as the Saskatoon Engineering Society and the APEGS Student Development Committee.

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES | SK

Letter from new ACEC-SK Chair

As we move into the next year, I reflect on the times that ACEC-SK has recently experienced, including several unanticipated departures at the board level. ACEC-SK now has a stable, committed team to lead the way. This team looks forward to directing a respected association that is looked to for its expertise.

To bring in this new year, the board will be meeting to re-establish the strategic direction of the association. Please take the time to let us know any of your comments and suggestions.

This year we will be starting up the new Awards Committee that will support awards activities internal and external to the association. A task group led by Bert Munro, P.Eng. has spent time to create a solid foundation on which to build this new committee. I look forward to the work that will come out of it.

Consulting in general has been questioned during the last year. Our role is advocating for the consulting engineering and geoscience industry in Saskatchewan. As such, ACEC-SK will be taking an active role meeting with many different stakeholders, including government, opposition, and industry clients, to reinforce the value that we bring to society. As consultants we have the ability to augment the staff resources of our clients, bring specialized knowledge, deliver an outside business perspective and provide experience from working with other clients facing similar challenges. All of these resources give our clients cost-effective and innovative solutions.

A diversified industry is important for bringing new ideas and creating an inclusive and welcoming work environment. I am looking to create opportunities for ACEC-SK to be a leader in diversifying the workforce in consulting engineering and geoscience industry.

At the ACEC Canada Leadership Summit I had the opportunity to connect with other member organization chairs. Many of us are experiencing similar challenges and opportunities in our provinces and territories. I look forward to working with the other MOs and national to explore how we can collaborate and partner on our common issues.

Thank you for giving me this opportunity.

Sincerely,
Stormy Holmes, P.Eng., FEC
Chair ACEC-SK

ACEC-SK Introduces First Female Chair

Effective June 5, 2015, Stormy Holmes, P.Eng., FEC assumed the Chair of the Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK) board of directors. Holmes is the first female chairperson in the association's history.

Actively involved in the Association since 2012 as a director, Holmes was elected as Vice Chair in 2013, a position she held for two terms until she was elected as Chair at the Annual General Meeting. She is joined by Jeff Halliday, P.Eng., Vice Chair, Paul Walsh, P.Eng., Secretary-Treasurer and Jason Gasmo, P.Eng., Past Chair as the board executive.

These individuals will lead the 2015-2016 board of directors composed of directors Tim Magus, P.Eng., Terry Frank, P.Eng., Trevor Knoll, P.Eng., Bryce Hunter, P.Eng., and ACEC-Canada Liaison Lawrence Lukey, P. Eng., Young Professionals Liaison Chelsey Bartlett, P.Eng., APEGS Liaison Tara Zrymiak, P. Eng., FEC and Associate Member Liaison Shane Baillargeon, MBA.

"Stormy Holmes has made significant contributions to our Association in her previous roles with ACEC-SK," said Executive Director Beverly MacLeod. "She has expressed a very clear vision about what she would like to accomplish in the coming year and we look forward to assisting her achieve this vision."

The Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK) is a non-profit association representing the interests of the majority of consulting engineering and consulting geoscience firms in Saskatchewan. As the business voice of the Saskatchewan consulting engineering and geoscience industry, ACEC-SK is the link between private industry, government, purchasers, decision makers and owners.

For more information, contact:

Stormy Holmes, P.Eng., FEC
ACEC-SK Chair
306.955.3300
stormy.holmes@aecom.com

Beverly MacLeod
ACEC-SK Executive Director
306.359.3338
bmacleod@acec-sk.ca

AGM Highlights ACEC-SK Accomplishments

Jason Gasmo, P.Eng.
Past Chair

tACEC-SK hosted a well-attended Annual General Meeting at the Harbor Golf Club & Resort Tournament Building in Elbow SK on June 5, 2015.

ACEC-SK board Chair, sector/member Committees representatives and executive director reported on the actions and accomplishments of the Association made over the last 12 months.

The reports alluded to progress on issues heard at the 2014 AGM regarding challenges with contract language and procurement practices. For instance, this past year the board and sector committees met with cabinet ministers and other government officials to specifically discuss these issues. ACEC-SK has contributed to Priority Saskatchewan's provincial procurement review, as well as being an integral part of the Saskatchewan Construction Panel's Harmonizing Procurement Task Group. The association has also been engaging key stakeholders, including SaskPower, about onerous contractual language.

Members encouraged the Association to continue developing relationships with stakeholders, politicians and media who may not understand the value of our members' professional services.

The board was recognized for the volunteer time and effort necessary to be stewards for these and other industry challenges.

2015 ACEC-SK Annual Golf Tournament

Each year the ACEC-SK Annual Golf Tournament brings the association's membership and industry stakeholders out to enjoy an afternoon of golf and networking with other engineering and geoscience professionals.

This year's event on June 5, 2015 began with ideal golfing conditions at Elbow's Harbor Golf Club & Resort: sunshine, a gentle breeze and ideal course conditions for more than 100 golfers.

2015 Tournament Winners
Ground Engineering - Lowest Score: 62

L to R: Tim Adelman, P.Eng., Richard Jankowski, Kelly Yuzdepski, P.Eng., Tom Williams, P.Eng., Jeff Halliday, P.Eng. and ACEC-SK Vice Chair.

2015 VIP Cart Winner
Leane Campbell, Tetra Tech Team

L to R: Leane Campbell, P.Eng., and Terry Frank, P.Eng., ACEC-SK director and volunteer extraordinaire.

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES | SK

ACEC-SK would like to acknowledge and thank this year's major Golf Tournament sponsors for their support.

Their generous contributions ensure the continued success of this annual event.

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APEGS

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Wolseley Industrial Canada Inc

SUPPORTER SPONSORS
ALFA Engineering Ltd.
Argue and Associates Management Consultants Inc.
Catterall & Wright

The ACEC-SK staff extends thanks to our member volunteers whose participation was most appreciated.

Tara Zrymiak, P.Eng., FEC
Stormy Holmes, P.Eng., FEC
Chelsey Bartlett, P.Eng.
Mel Leu, P.Eng.
Tim Magus, P.Eng.
Paul Walsh, P.Eng.

News Beyond Our Borders

U of A researchers driving hydrogen vehicle efforts

The PEG - As countries around the world struggle to reduce carbon emissions, the race is on to find greener transportation options. Engineering researchers at the University of Alberta want to see hydrogen vehicles make it to the finish line.

Hydrogen fuel-cell technology isn't new but it's been too costly to bring to market. Dr. Marc Secanell Gallart, P.Eng., who directs the university's Energy Systems Design Laboratory, is finding ways to lower costs by reducing the amount of platinum needed.

This rare and expensive metal acts as a catalyst in the chemical reaction that creates electricity from hydrogen. Dr. Gallart has been collaborating with Mercedes Benz and Ford, which have both used his research to release hydrogen vehicles on a small scale. The companies plan to expand their offerings in the next couple of years as hydrogen fill-up stations become more common.

Hydrogen vehicles run five times longer than battery-pack electric cars and are refuelled quicker — in just a few minutes, rather than the 30 minutes to several hours needed to charge electric cars.

Pet food innovation centre

The PEG - Alberta's eat local movement is going to the dogs — and cats. Champion Petfoods is set to open its new, $5.9-million BAFRINO Research and Innovation Centre in the town of Morinville, about 30 kilometres north of Edmonton. BAFRINO is an acronym for the company's motto: Biologically appropriate, fresh regional ingredients, never outsourced.

Researchers at the 9,500-square-foot lab, next to the company's existing manufacturing plant, will be cooking up healthier pet food formulas that include more fresh, locally sourced meats. The company will work closely with researchers at the University of Alberta's Agri-Food Discovery Place, which is home to a new, pilot-scale food extruder, partially funded by Champion. The university's extruder is for the test production of food from new recipes.

Dubai plans to build 3-D printed office building

Associated Press - Fast-growing Dubai, where something new is always being added to the skyline, may have found a way to make construction move even faster. The Gulf commercial hub on Tuesday announced plans to add the world's first office building made using three-dimensional printer technology to its collection of eye-catching buildings.

The project is part of a broader effort by the seven-state federation to embrace cutting-edge technology and make it a global hub for innovation.

The roughly 2,000-square-foot office building and furniture used inside will be printed out layer by layer from a mixture of reinforced concrete, gypsum and plastic using a 20-foot tall 3-D printer.

The project is a partnership with WinSun Global, a Chinese company which has begun assembling houses and other buildings made using 3-D printers, and architectural and engineering firms Gensler, Thornton Thomasetti, and Syska Hennessy.

The Emirati statement said 3-D printing technology has the potential to cut building construction time and labour costs by at least half, and reduce construction waste by 30-60 per cent.

Officials plan to use the office as the temporary headquarters of a $136 million "Museum of the Future" announced earlier this year that is expected to open in 2017.

Nationwide flood warning system

Engineering Dimensions - It may surprise you to learn that, unlike the US, UK and some other developed countries, Canada has no national flood warning system. But that's about to change, thanks to a bold new strategy being championed by hydrologic modelling and forecasting expert Paulin Coulibaly, P.Eng.

Coulibaly is the principal investigator behind FloodNet, a comprehensive nationwide strategy that is bringing together the most advanced expertise and tools in the field to improve how floods are handled in Canada.

"With FloodNet, our main desire is to enhance the Canadian capacity for dealing with floods, in terms of forecasting and estimating, and in terms of their impact, and that any decisions made will be based on sound science," says Coulibaly, a professor in McMaster University's department of civil engineering and school of geography and earth sciences.

In Canada, floods are the most common and largely distributed hazard to life, property, the environment and the economy. The flood of June 2013 in southern Alberta, which cost approximately $1.7 billion in damage, is now considered the costliest natural disaster in Canadian history and that's only the worst of several examples of the high economic cost of flooding, which has been increasing in frequency and intensity over the last 20 years, mainly because of climate change.

Forecasting and managing floods is a provincial responsibility, and so the infrastructure and techniques to do so vary widely from province to province. This patchwork approach makes it difficult for provinces to coordinate their flood response if the need arises. What's more, individual provinces typically lack the resources to access the most sophisticated tools and knowledge in flood forecasting, which can result in less-than-optimal success rates. For example, Coulibaly says, most provincial systems don't have the ability to consider how specific landscape features affect flooding in their regions.

Use of the resulting system will be optional, meaning provinces can choose whether to use it exclusively or in parallel with their own systems. FloodNet research will also yield new methods for updating the intensity-duration-frequency (IDF) curves of heavy rainfall. These insights will be used to develop a standard flood estimation manual and software, which Coulibaly says will be useful to engineers involved in designing such hydraulic infrastructure as bridges, urban drainage systems and culverts. As well, engineers will learn how to improve operation of hydropower reservoirs to reduce incidents of downstream flooding.

Nano-based initiative helps heat and cool roofs

Engineering Dimensions - A University of Waterloo engineering graduate has combined the basic property of light reflection with nano-materials to come up with a roof coating material that could save home and commercial building owners big money in heating and cooling costs. Lindsay Brock, a graduate of Waterloo's nanotechnology engineering program, was a member of a capstone project team that developed a two-phase, thermally reflective roof coating material – in other words, it changes colour depending on whether it is hot or cold.

The resulting company, Grayscale Coatings, was one of the winners in the university's 2014 Norman Esch Entrepreneurship Awards for Capstone Design.

The coating consists of small particles inside a polymer matrix. By studying the refractive properties of two different components, the research team came up with a coating material permitting absorption of sunlight when it's cold and the reflection of sunlight when it's hot.

Previously developed roof coatings have been unstable at lower outside temperatures and lack overall robustness. In fact, robustness and a firm appreciation of Canadian weather conditions were top of mind to Brock and her team in developing Grayscale Coatings.

News From The Field

Science Centre recognized for engineering

Regina Leader-Post - One of Regina's best-known landmarks was recognized for its unique engineering. The 101-year-old powerhouse on Wascana Lake was named a Historic Civil Engineering Site by the Canadian Society for Civil Engineering (CSCE).

The building, which began its life providing the main power supply for Regina, now houses the Saskatchewan Science Centre and SaskPower's research facility.

Built in 1914 by the Regina Light and Power Company, it was the first coal-fired plant in the area. The city sold the building to what is now SaskPower in 1965 and it was phased out and closed for good in 1978. Eleven years later, the brick building has be gutted and repurposed to become the science centre.

"We were particularly impressed by the way SaskPower and its partners have transformed a historic piece of infrastructure into a vibrant cultural and scientific centre, which in other circumstances might have been demolished," said Reg Andres, president of the CSCE.

Sask business must innovate, expert says

Saskatoon StarPhoenix - Saskatchewan lags in business innovation at a time when it should be investing in research and development, says expert Peter Phillips.

Business has benefited from high world prices for Saskatchewan's potash, oil and agricultural products in the past decade, but it has failed to invest in creating new ways to stay profitable when prices fall, said Phillips, professor and graduate cChair of the Johnson-Shoyama Graduate School of Public Policy at the University of Saskatchewan.

"We have enjoyed the commodity boom . . . but we haven't used the resources as wisely as I think we could have."

When commodity prices rebalance, "that will take the top off revenue streams and we won't have much left to show for it except that we may have recapitalized in personal wealth or to corporate wealth that's not focused on Saskatchewan," he said at the Conference Board of Canada's Saskatchewan Forum 2015 in Saskatoon.

The Organisation for Economic Co-operation and Development (OECD) recommends investing three per cent of gross domestic product (GDP) in research and development to be competitive in the 21st century, but Saskatchewan spends less than one per cent.

"That's pathetic. We are dependent on innovation and yet we invest a third of what the world says we should be investing. There's no reason. We're the second wealthiest jurisdiction in Canada (on a per capita basis), which makes us one of the wealthiest jurisdictions in the world," Phillips said.

There is almost no discussion about innovation in Canada's mining sector, but in Australia, which produces many of the same things we do, there is heavy investment in automated mining methods, automated trains, trucks and computer-managed mining systems. Those innovations bring down break-even costs so that when prices drop, they'll still be a low-cost producer, Phillips said.

UNIVERSITIES AND RESEARCH

IMII gets $1M from Innovation Saskatchewan

Regina Leader-Post - An additional $1 million investment in the International Minerals Innovation Institute (IMII) was announced by Innovation Saskatchewan at the IMII's annual general meeting in Saskatoon.

In 2012, Innovation Saskatchewan committed $2.7 million to the minerals industry education and research accelerator, which has helped fund seven education and two research projects to date, bringing its total investment in IMII to $3.7 million.

The IMII is a collaboration between industry, government and education and research institutions to focus on industry's top concerns and accelerate the development of solutions for its needs. The IMII has invested in a number of projects that are helping address industry's largest challenges, from the skilled labour shortage to research and development projects addressing safety, environment, extraction, processing, exploration and market issues.

The IMII is the only institute in Canada dedicated to conducting research on the unique problems arising from potash and uranium production — two key minerals in Saskatchewan's mining industry.

http://www.lightsource.ca/

Study shines a light on uranium mill tailings

World Nuclear News - Tailings - the waste from uranium ore milling operations - from McClean Lake are stored in the JEB tailings management facility, a former open pit mine. The management facility has been in operation since 1999, so drilling through the layers of material in the facility gives a snapshot of the tailings at different stages.

Researchers used the Canadian Light Source synchrotron to investigate the life cycles of elements such as lead, arsenic and molybdenum using X-ray Absorption Near-Edge Spectroscopy (XANES), a technique that can detect specific elements at very low concentrations.

"We want to know how the materials that contain these elements of concern are changing over time and if they reach a point where they form an insoluble product in which case everything would stay put," University of Saskatchewan lead researcher Andrew Grosvenor explained.

Based on current mining and milling projections, approximately 5 million cubic metres of tailings will be generated at the McClean Lake operation over the next 25 years and will be stored in the JEB facility.

The study's findings will be invaluable to the long-term care of the McClean Lake site and researchers are looking to move on to other elements of concern.

"Once you understand the geochemical reactions that are occurring, then you can start to predict what will be occurring over the next 50, 100 or 1,000 years in the environment," Grosvenor said.

ENERGY

City loses global energy expert

Saskatoon StarPhoenix - Imagine living in a house with no furnace. In Saskatoon. Year-round.

Saskatoon's late, great energy pioneer Rob Dumont not only imagined it, he did it. Rob lived comfortably with his family in their attractive Main Street house - with no furnace or gas bill - until last week, when he died of brain cancer.

The energy crisis of 1973 was an early wake-up call about overdependence on fossil fuels. Responding to that alarm, the Saskatchewan government commissioned a group of researchers, including grad student Dumont, to build the Saskatchewan Conservation House in 1976.

That house, and the several iterations that followed, helped launch the energy-efficient building movement in Canada, including the R2000 program, and the Passivhaus movement in Europe, which has certified more than 25,000 super-low-energy homes.

The people behind the Conservation House decided to increase the insulation to an unheard of R40 in the walls and R60 in the ceiling. On top of that, they sealed the house tight to eliminate air leaks. Consequently, the Conservation House used a fraction of the heating required for a typical insulated house of that period. Sealing the house, however, meant too much moisture built up inside. No problem: The Saskatchewan team conceptualized the first heat recovery ventilators to bring in fresh air and eliminate excess moisture without losing heat. This concept was commercialized by a Saskatoon company, creating jobs and wealth in the local economy.

Dumont started work at the National Research Council in 1979 and helped develop the first building energy management software for a microcomputer, with some 100,000 copies in use throughout the world.

Then in 1980, Dumont helped to design a "parade" of 14 low-energy homes on Christopher Road in Saskatoon. Improved energy efficiency standards in housing throughout Canada and beyond soon followed. He continued to up the ante when he moved to the Saskatchewan Research Council in 1990. He worked on the

Advanced House and his own home, which for many years was considered the best-insulated in the world.

Dumont outdid himself in the design of the Factor 9 Home, built in Regina in 2007. It uses 90 per cent less energy than conventional housing, and half the water. The extra investment for insulation, solar panels and other enhancements will be recovered in 25 years from energy and water cost savings.

SaskPower's carbon capture project wins award

Regina Leader-Post - SaskPower's Boundary Dam carbon capture and storage (CCS) project has won the 2015 Edison Award, the international electrical industry's top honour, the Crown corporation announced.

The award, given by the US-based Edison Electric Institute, celebrates "distinguished leadership, innovation and contribution to the advancement of the electrical industry for the benefit of all."

SaskPower president and CEO Mike Marsh said the award "belongs to everyone who has helped make environmentally sustainable coal power a reality."

"It belongs to SaskPower employees, to the many contracted companies that assisted on the project, and to the communities that supported us and continue to support our company's mission for a power grid that is reliable, affordable and, especially, environmentally sustainable," Marsh said.

June also saw the inauguration of SaskPower's carbon capture test facility at Shand Power Station near Estevan. This facility will allow international vendors to test and develop their CCS technologies in Saskatchewan, giving SaskPower access to the next generation in CCS innovation. SaskPower also recently celebrated the successful injection of carbon dioxide for permanent storage 3.4 km underground in a porous rock layer at its Aquistore Project, which is being managed by the Petroleum Technology and Research Centre.

INFRASTRUCTURE

Fewer solo drivers aim of Regina 25-year plan

CBC News – Regina's long-term goal is to have relatively fewer solo drivers, a draft report says.

The final draft of the city's master transportation plan has just been released, and it's supposed to guide policies for the next 25 years regarding cars, bikes, buses and walking.

It notes that currently, during peak periods — the morning hours when people are heading to work or school — 67 per cent of those on the move are driving alone in their cars.

The draft plan going to the city's public works and infrastructure on Thursday calls for reducing that number to 60 per cent by 2039.

The plan says that can be accomplished by getting more people to walk, bike or take a bus to work or school. It also envisions more carpooling.

http://ckom.com

Builders chosen for new P3 schools in Sask

Global News – Three new joint-use schools in Regina are one step closer to being built – a construction team has been chosen.

Joint Use Mutual Partnership (JUMP) has been selected to build nine P3 schools in Saskatchewan, with construction starting by this summer.

JUMP was selected to build the schools after it successfully completed a two-staged, transparent procurement process consisting of a request for qualifications and a request for proposals. The team comprises:

- Concert Infrastructure Ltd. (British Columbia)
- Bird Capital Limited Partnerships/Bird Design-Build Construction Inc. (Ontario)
- Wright Construction Western Inc. (Saskatoon)
- Kindrachuck Agrey Architecture (Saskatoon)
- Johnson Controls Canada LP (United States, with Canadian offices)
- GEC Architecture (Alberta)

The three new schools in Regina will be in the Harbour Landing, Greens on Gardiner and Skywood neighbourhoods – accommodating more than 3,000 students from pre-kindergarten to grade 8.

Update on Regina's new wastewater plant

CBC News - City officials are offering a progress report on a new wastewater treatment plant, currently under construction on the west edge of Regina.

According to EPCOR, the builder of the plant, the project is both on time and on budget. It's also about 40 per cent complete.

The sewage plant upgrade was at the centre of stormy public debate when the city opted to have a private sector company build and operate the facility. A referendum was held and voters endorsed the public-private partnership.

The city said the upgraded facility was necessary to fall in line with new regulations on how wastewater is treated across Canada.

"Construction includes three new bioreactors which reduce ammonia and phosphorus in wastewater, the refurbishment of the primary sedimentation tanks, as well as three new secondary clarifiers," a city release said.

The city estimates total construction will cost $181 million.

Last fall, EPCOR set up a construction webcam so people could monitor the project from home.

metronewsca.files.wordpress.com

Proponent selected for Regina Bypass project

Journal of Commerce - A proponent has been named to design, build, finance and maintain the Regina Bypass Project. Construction of the public-private partnership (P3) project is expected to begin soon.

SaskLink Global Transportation Partners, led by Vinci and including Parsons, McElhanney, Urban Systems, Buckland and Taylor, Exp, Clifton Associates and Delcan, beat out two other shortlisted firms.

The completion date will be based on the terms of the final project agreement.

The project calls for designing, building, financing, operating and maintaining the bypass for 30 years.

The Saskatchewan government will own the completed project.

The Regina Bypass could cost more than $1 billion and is the largest transportation project in the province's history.

The 40-kilometre highway will run from Highway 11 north of the city and around its southwest to meet the Trans-Canada Highway east of Tower Road.

Government officials state that the bypass is needed to support the continued growth of Regina's Global Transportation Hub (GTH).

Comprising 1,800 acres, the GTH is the province's major intermodal facility and its largest transportation logistics hub.

Shantel Lipp, president of the Saskatchewan Heavy Construction Association, called the bypass a great project for the heavy civil construction industry in Saskatchewan.

"The major general contractors that are leading the proponent teams are not Saskatchewan-based companies, but many of the team members are local," she said.

Lipp said it will be difficult to determine how involved local companies will be with the bypass project, in both the short and long term, until the successful team is chosen and the process moves forward.

OIL AND GAS

Saskatchewan still hopes to mine its own oil sands

CBC News - After more than a decade of effort, millions spent on research and a corporate bankruptcy, Saskatchewan, which hasn't produced a drop of oil from bitumen, remains determined to develop its own oil sands.

The odds seem to be stacked against Saskatchewan oil sands development. Alberta's oil sands contain 1.8 trillion barrels of crude bitumen. At around 8 billion barrels, Saskatchewan's reserve estimates are significantly smaller. A current glut of oil in the world also raises questions about whether expensive barrels from Saskatchewan will ever even be needed by the global oil market.

In 2007, Oilsands Quest spent millions researching how to extract bitumen from the early stage play. When access to capital dried up along with the financial crisis, the junior company was forced into bankruptcy protection.

Currently, companies have no way to extract the bitumen in Saskatchewan. Scientists and engineers have tried to find a solution. While they have yet to find an answer, they may be getting close. The Saskatchewan Research Council (SRC) worked with Oilsands Quest many years ago on this project. In the next several years, the council is pledging to figure out how to extract Saskatchewan's bitumen.

SRC scientists are hopeful the use of electricity and solvents could be the solution. Researchers are trying to develop a low-temperature, low-pressure method to exploit the reserves. Techniques under development include using electrical thermal heating and solvents instead of steam.

Those methods could also result in a lower energy, more environmentally sensitive way of extracting bitumen than conventional approaches used in Alberta.

Any potential oil sands operator would face several other challenges, including transportation, environmental concerns and the sheer time and cost to bring the technology to a commercial stage.

Ultimately, Saskatchewan's efforts could prove to be Alberta's gain. If the technology is proven, it will likely be put to use in Alberta first, and will greatly expand how much bitumen can be recovered in the province.

MINING

Sask mining industry expecting labour shortage

Canadian Press – Saskatchewan's mining industry could be facing a labour shortage. A new report found more than 12,000 new workers will be needed over the next decade to keep up with production demands.

The 2014 Mining Industry Hiring and Talent Forecasts Report found 12 per cent of the current workforce is over 55. Looming retirements will pose a big challenge to the industry.

The Mining Human Resources Council said more needs to be done to attract women and skilled immigrants into the industry.

"If you don't have the people to help take the ore out of the ground, your industry suffers in terms of their productivity, in terms of profitability, and in terms of their sustainability," said Barb Kirby, director of the council.

The council found that at the current pace, only 6,900 people are expect to join the mining industry over the next decade.

Pam Schwann, P.Geo., of the Saskatchewan Mining Association says they need to look at strategies for retention. She says one focus has to be on making sure a person who enters at the age of 25 can stay engaged in the sector until they hit 55 and are ready to retire.

Northern mine and cleanup sites not threatened

Saskatoon StarPhoenix - Forest fires are not affecting uranium mines or old mine cleanup sites in the North, officials said in July.

At time of printing, none of Cameco's mines were in the vicinity of forest fires and the company has equipment and well-trained staff to fight fires in case they do come close, communications director Gord Struthers said.

"We're closely monitoring the situation. We're experiencing some disruption because of operating restrictions at airfields and with surface transportation of materials to the sites, but there's no immediate fire threat," Struthers said.

Radioactive tailings are submerged in water, so they would not be affected by fire, and no plants are growing on the piles of waste rock, he said.

Inactive surface tailings facilities at Key Lake and Rabbit Lake are isolated in engineer-designed layers of rock, gravel and geotextiles to prevent their being exposed to the surface, "under any circumstances, including forest fires," he said. Vegetation grows on the reclaimed sites, which were built to prevent uptake of contaminated material by plants, Struthers said.

"If there was a fire it would not involve any significant release of any kind of contaminants that we manage."

Claims on social media suggesting the forest fire smoke is contaminated are "completely false," Struthers added.

It's also "business as usual," at old mine cleanup sites on the north shore of Lake Athabasca, said Ian Wilson, environmental remediation manager for Saskatchewan Research Council (SRC).

Crews remain on the Larado site, building the engineered cover systems for tailings left over from milling operations that closed decades ago. The area is affected by smoke blowing in from Alberta but it is not preventing the work, which is expected to be finished this year, Wilson said.

The SRC manages 35 former mine and mill sites north of Lake Athabasca and two sites north of La Ronge, neither of which is currently threatened by fire, Wilson said.

"There's nothing to burn . . . nothing grows on the rocks. Most sites are denuded of vegetation," he said.

Attention Students:

16 Engineering and Geoscience Scholarships Available

The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) is pleased to announce 16 annual scholarships to be awarded in the Fall of 2015 at the University of Saskatchewan and the University of Regina.

Entrance Bursaries

These bursaries are aimed at encouraging and assisting high school graduates entering the study of engineering or geoscience. These bursaries are particularly aimed at Aboriginal students who are under-represented in the professions.

Two bursaries of $3,625 (one for each university) to be applied towards first-year tuition in any field of engineering for a self-identified Aboriginal student.

Two bursaries of $2,750 (one for each university) to be applied towards first-year tuition in any field of geoscience for a self-identified Aboriginal student.

Two bursaries of $3,625 (one for each university) to be applied towards first-year tuition in any field of engineering for a student of any background.

Undergraduate Scholarships

These academic performance and community participation-based scholarships are aimed at recognizing leadership and volunteerism among students currently enrolled in engineering or geoscience.

Six scholarships of $1,875 (three for each university) for current students of any field of engineering.

Two scholarships of $1,875 (one for each university) for current students of any field of geoscience.

Member Grants

These merit-based member grants are aimed at encouraging existing APEGS members to further their education.

Two member grants of $7,500 (one for each university) for current APEGS members returning for postgraduate studies in fields of engineering, geosciences or an MBA program.

Professional Engineers and Geoscientists

We See More.

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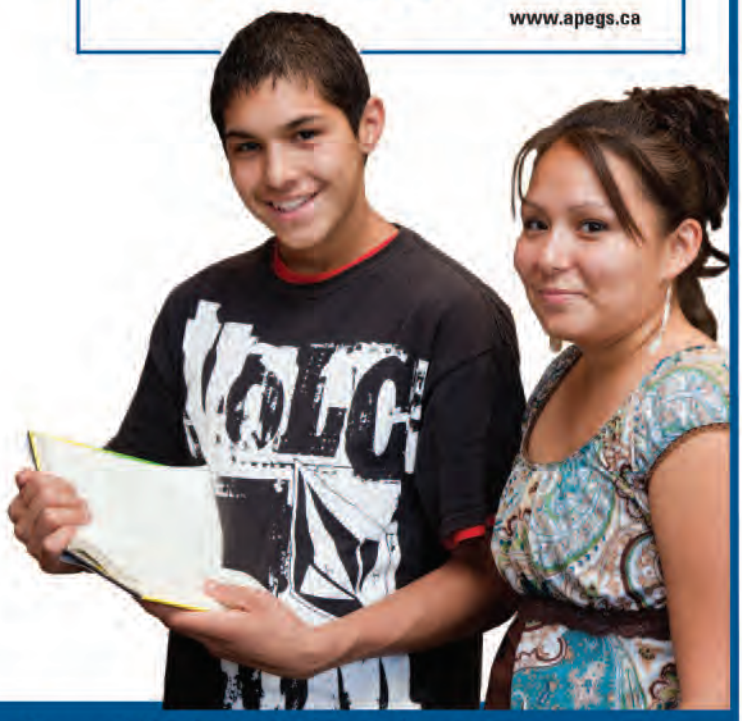
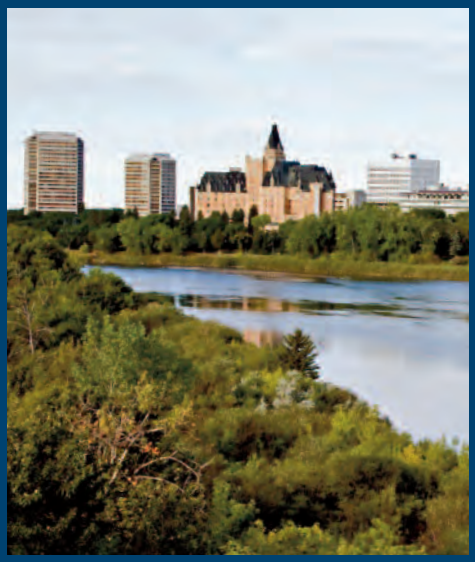


For more information on these scholarships please visit the APEGS website at **www.apegs.ca**

Calendar Of Events



NOCMAT 2015 International Conference
August 10-13, 2015
Location: Engineering and Information Technology Complex, University of Manitoba
http://umanitoba.ca/conferences/nocmat2015/index.html

ACHIEVE Training
Respectful Workplace – Strategies for a Healthy Environment
August 18, 2015
Webinar
https://ca.achievecentre.com/workshops

ACHIEVE Training
Dealing With Difficult People Live Webinar
September 09, 2015
Webinar
https://ca.achievecentre.com/workshops

A Climate of Change: Western Canada Water 2015 Annual Conference
September 15-18, 2015, Winnipeg, MB
www.wcwwa.ca/events

Healthcare Facilities and the Technology Highway
September 20-22, 2015
Location: Shaw Conference Centre, 9797 Jasper Avenue, Edmonton, AB
www.ches.org/conferences-and-events

Expert Witness Seminar
September 22, 2015, Vancouver, BC and Webinar
www.apeg.bc.ca/Events/Events/15SEPEWZ

The ENGAP 30th Anniversary Celebration and Homecoming
October 2-3, 2015 , Winnipeg, MB
bit.ly/1Gxjgbz

Canadian Dam Association 2015 Annual Conference
October 3-8, 2015, Mississauga, ON
www.imis100ca1.ca/cda

ACHIEVE Training - Coaching Strategies for Leaders – Conflict, Performance, Change
Saskatoon – October 13 Regina – October 16
https://ca.achievecentre.com/workshops

Hydraulic Modeling of Water Distribution Systems Seminar
November 06, 2015, Vancouver, BC
www.apeg.bc.ca/Events/Events/15NOVHMO

ACHIEVE Training - Assertive Communication
Regina – November 9 Saskatoon - November 12
https://ca.achievecentre.com/workshops

ACHIEVE Training - Conflict Resolution Skills
Regina – November 10, 2015 Saskatoon – November 13, 2015
https://ca.achievecentre.com/workshops

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